

IN THE CLAIMS

Please cancel claims 11 and 12 without prejudice or disclaimer.

Please amend the claims as shown below.

1. (Previously Presented) A terminal for generating an electromagnetic field adapted to cooperating with at least one transponder when the at least one transponder is within said electromagnetic field and including an oscillating circuit adapted to receiving a high frequency A.C. excitation voltage, including:

means for maintaining a constant phase relationship between a signal in the oscillating circuit and a reference signal;

means for determining an instantaneous information relative to an instantaneous magnetic coupling between the transponder and the terminal; and

means for adapting a power of the electromagnetic field according to at least said instantaneous information.

2. (Previously Presented) The terminal of claim 1, including means for measuring a first quantity which is a function of an instantaneous voltage across a capacitive element of said oscillating circuit and a second quantity which is a function of an instantaneous current in said oscillating circuit.

3. (Previously Presented) The terminal of claim 2, including means for determining and storing characteristic information relative to a magnetic coupling between the transponder and the terminal in several determined configurations of a distance separating the transponder from the terminal, and for taking account said characteristic information in the adaptation of the electromagnetic field power.

4. (Previously Presented) The terminal of claim 3, wherein said characteristic information includes, among others:

a voltage across the capacitive element when no transponder is present in the electromagnetic field of the terminal;

a voltage across the capacitive element when a transponder is in a relation of maximum closeness with the terminal;

a current in the oscillating circuit when no transponder is present in the field of the terminal; and

a current in the oscillating circuit when a transponder is in a relation of maximum closeness with the terminal.

5. (Previously Presented) The terminal of claim 3, wherein said instantaneous information is deduced from respective values of said two quantities and of respective values of said characteristic information.

6. (Original) The terminal of claim 3, wherein at least one characteristic information is automatically determined by the terminal in a learning phase.

7. (Previously Presented) The terminal of claim 1, wherein the means for adapting the power of the electromagnetic field includes means controllable to modify the A.C. excitation voltage of the oscillating circuit of the terminal.

8. (Previously Presented) The terminal of claim 1, wherein the means for adapting the power of the electromagnetic field include one or more controllable resistive elements, belonging to the oscillating circuit of the terminal.

9. (Previously Presented) The terminal of claim 1, wherein a response time of the means for maintaining is chosen to be large as compared to a frequency of a possible back-modulation coming from a transponder present in the electromagnetic field of the terminal and to be fast as compared to a displacement speed of a transponder in this electromagnetic field.

10. (Previously Presented) The terminal of claim 1, wherein said oscillating circuit includes an element of variable capacitance, said terminal including means adapted to determining a value of this capacitance based on a phase measurement on the signal in the oscillating circuit by varying a voltage across the element of variable capacitance.

11-12. (Canceled)

13. (Previously Presented) The method of claim 1, wherein the terminal further includes:

an oscillator to provide an excitation signal to the oscillating circuit, and
wherein the reference signal corresponds to the excitation signal.

14. (Previously Presented) The method of claim 1, wherein the means for maintaining a constant phase relationship is operative to maintain a constant relationship between a phase of a current in the oscillating circuit and a phase of the reference signal.

15. (Previously Presented) A terminal for generating an electromagnetic field, the terminal being adapted to cooperate with a transponder when the transponder is within the electromagnetic field, the terminal comprising:

an oscillating circuit; and
a phase regulating circuit to maintain a constant phase relationship between a current in the oscillating circuit and a reference signal.

16. (Previously Presented) The system of claim 15, wherein the transponder imposes a load on the oscillating circuit when the transponder is within the electromagnetic field, the imposed load impacting an impedance of the oscillating circuit and

wherein the phase regulation circuit is operative to compensate for an imaginary part of the imposed load so that an imaginary part of the impedance of the oscillating circuit is null.

17. (Previously Presented) The terminal of claim 15, further comprising:
an oscillator to provide an excitation signal to the oscillating circuit,
wherein the reference signal corresponds to the excitation signal.
18. (Previously Presented) The terminal of claim 15, further comprising:
a control unit to control a substantially linear modification of a power transmitted by the
terminal based on a distance between the transponder and the terminal.
19. (Previously Presented) The terminal of claim 18, wherein the control unit is
operative to control modification of the power transmitted by the terminal by controlling
modification of a value of a resistive element in the terminal.
20. (Previously Presented) The terminal of claim 18, wherein the control unit is
operative to control modification of the power transmitted by the terminal by controlling
modification of a value of a voltage generated by the terminal.
21. (Previously Presented) The terminal of claim 18, wherein the control unit is
operative to evaluate a distance between the transponder and the terminal according to phase
correction information provided by the phase regulating circuit.
22. (Previously Presented) The terminal of claim 21, wherein the phase correction
information includes a voltage across a capacitive element of the oscillating circuit.
23. (Previously Presented) The terminal of claim 15, wherein the phase regulating
circuit is operative to detect a phase interval between a current in the oscillating circuit and the
reference signal and to modify a capacitance of the oscillating circuit in response to the phase
interval.

24. (Previously Presented) The terminal of claim 15, further comprising:
a current measurement circuit to measure a value of the current in the oscillating circuit
and to provide the measured value to the phase regulating circuit.
25. (Previously Presented) The terminal of claim 15, further comprising:
a storage element to store measurement values corresponding to at least two conditions,
the measurement values being acquired during a learning phase of operation of the terminal.
26. (Previously Presented) The terminal of claim 25, wherein the measurement values include:
a first value of the current in the oscillating circuit corresponding to a first condition
wherein the transponder is maximally close to the terminal; and
a second value of the current in the oscillating circuit corresponding to a second condition
wherein no transponder is present in the electromagnetic field of the terminal.
27. (Previously Presented) A method of controlling a power of an electromagnetic field generated by an oscillating circuit of a terminal adapted to cooperate with a transponder when the transponder is within the electromagnetic field, the method comprising an act of:
(A) maintaining a constant phase relationship between a current in the oscillating circuit and a reference signal.
28. (Previously Presented) The system of claim 27, wherein the transponder imposes a load on the oscillating circuit when the transponder is within the electromagnetic field, the imposed load impacting an impedance of the oscillating circuit and
wherein the phase regulation circuit is operative to compensate for an imaginary part of the imposed load so that an imaginary part of the impedance of the oscillating circuit is null.
29. (Previously Presented) The method of claim 27, the terminal further comprising an act of:
(B) providing an excitation signal to the oscillating circuit,

wherein the reference signal corresponds to the excitation signal.

30. (Previously Presented) The method of claim 27, further comprising an act of:

(B) evaluating a distance between the terminal and a transponder in the electromagnetic field of the terminal; and

(C) modifying the power of the electromagnetic field based on the distance between the terminal and a transponder.

31. (Previously Presented) The method of claim 30, wherein the act (C) includes modifying a value of a resistive element of the terminal.

32. (Previously Presented) The method of claim 30, wherein the act (C) includes modifying a value of a voltage generated by the terminal.

33. (Previously Presented) The method of claim of claim 30, wherein the act (B) comprises evaluating the distance between the terminal and the transponder according to phase correction obtained during the act (A).

34. (Previously Presented) The method of claim of claim 27, wherein the act (A) includes acts of:

detecting a phase interval between the current in the oscillating circuit and the reference signal; and

modifying a capacitance of the oscillating circuit based on the phase interval.

35. (Previously Presented) The method of claim 27, wherein the act (A) includes obtaining phase correction information that includes a voltage across a capacitive element of the oscillating circuit.

36. (Previously Presented) The method of claim 27, wherein the act (A) includes measuring the current in the oscillating circuit.

37. (Previously Presented) The method of claim 27, further comprising, during a learning phase of operation of the terminal, acts of:

- (B) measuring values of the current corresponding to at least two conditions; and
- (C) storing the values in a storage element of the terminal.

38. (Previously Presented) The method of claim 37, wherein the act (B) includes:
measuring the current in the oscillating circuit when the transponder is maximally close to the terminal; and

measuring the current when there is no transponder present in the electromagnetic field of the terminal.